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ABSTRACT

Type A behavior is an epidemiological construct whose major features are aggressiveness, hostility, a sense of time urgency, and competitiveness; these features are considered measures of coronary-prone behavior in men and women. To determine a possible relationship between sex role orientation, parenting behavior, and Type A behavior, college students (N=170) completed an 89 item demographic questionnaire; the Jenkins Activity Survey (JAS), measuring Type A behavior; the Bem Sex Role Inventory; and a Parenting Behavior Form. Statistical analyses showed that high Type A college students (those with scores equal to or above the group mean on the JAS) compared to low Type A students, shared a common perception that their parents exercised less hostile control over them. High Type A men also perceived their parents as both less warm and less rejecting than did low Type A men. High Type A women perceived their mothers as warmer but more rejecting than did low Type A women; and high Type A women endorsed masculine sex role characteristics more strongly than low Type A women. In general, the data support the idea that cardiac prone behavior may be identified early in life, and may be related to socialization processes. (WAS)

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SEX ROLE IDENTIFICATION AND PARENTAL REARING PRACTICE: DETERMINANTS OF TYPE A BEHAVIOR IN COLLEGE AGE WOMEN AND MEN

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Paper presented at the Annual Meeting of the Southeastern Psychological Association, Atlanta, GA, March 23-26, 1983.

Sex Role Identification and Parental Rearing Practice Determinants of Type A Behavior in College Age Women and Men

Type A behavior is an epidemiological construct that arose from Friedman and Rosenman's (1974) observations of cardiac patients. The major features of Type A behavior are aggressiveness, hostility, a sense of time urgency, and competitiveness. Scores on the Structured Interview (Rosenman, et al., 1975), the Jenkins Activity Scale (Jenkins, et al., 1974), and the Framingham Type A scale (Haynes, et al, 1980). have been related to the incidence of coronary heart disease and are considered as measures of coronary-prone behavior in men and women (Waldron, 1978; Rosenman and Friedman, 1974; Kenigsberg, et al., 1974; Bengtsson, 1973). Conceptual approaches to Type A behavior have attempted to identify psychological processes underlying the target behaviors and link these behaviors with physiological changes that may increase the risk of cardiac disease (see Matthews, 1982 for review).

From a general social-learning perspective children could be expected to learn Type A behavior by modeling similar behaviors in their parents and as a result of the pattern of reinforcement used by their parents. While Type A

behavior has been described in children (Matthews, 1979; Wolf et al., 1982), there is little information concerning the relationship between parent's child rearing practices and children's Type A behavior. Matthews et al. (1977) reported that Type A mothers are harsh and critical in interactions with their children which may engender self-criticism and dissatisfaction expressed as Type A behaviors. In this regard, Friedman and Rosenman (1974) proposed that competitiveness, characteristic of Type A behavior, may develop at an early age when children use number of achievements to define self-worth.

Sex-role socialization practices of parents may have an impact on cardiac prone behavior in children, also. The fact that cardiac-prone behavior occurs more often in males than females (Haynes et al., 1978) has been attributed to development of male sex-role patterns (Waldron, 1978). Evidence that masculinity scores on the Bem Sex Role Inventory (BSRI) correlated positively with Type A behavior of male and female college students (Nix and Lohr, 1981; De Gregorio and Carver, 1980) supports the suggestion that sex-role socialization practices may contribute to cardiac-prone behavior. Kelly and Worell (1976) reported that masculine-typed women describe their parents as encouraging-, stimulating-, and rewarding-achievement; practices that reinforce Type A behavior. Masculine-typed males, however, describe their parents as cool and unaffectionate (Kelly and Worell, 1976), behaviors that lead to a process of self-definition through accomplishment of objective tasks.

To gather more insight into the possible relationship between sex role orientation, parenting behavior and Type A behavior, we obtained data describing personal characteristics and background, Type A behaviors, sex role orientation, and perceived parental childrearing practices from a large sample of college students. We predicted that the distribution of Type A scores in a college sample would include a significant proportion of persons whose mean Type A Scale score would be at or above the 50 percentile for the normative sample (Jenkins Scoring Manual, Form C, The Psychological Corporation). Furthermore, we hypothesized that sex-role orientation measures and descriptions of parents' child rearing practices would differentiate persons scoring above the sample mean on the Type A scale of the Jenkins Activity Survey (JAS) from those scoring below the sample mean.

Method

Subjects and Procedure

Male and female student volunteers from a freshman general psychology- and a junior Black psychology- class, were administered five survey instruments in a counter-balanced order. Student enrollment in the two classes was 208 of which 170 students completed the instruments.

Demographic survey. Volunteers completed an 89 item questionnaire covering basic demographic information which included: age, sex, religion, race, marital status, number of children, height, weight, income, grade point average, classification, number of credit hours carried, work

histories, physical exercise, smoking patterns, and incidence of cardiovascular and other diseases in their parents and grandparents.

JAS. The JAS (Jenkins et al., 1967) was scored for four factors: Type A, Speed and Impatience, Job Involvement, and Hard-Driving and Competitive. Responses to JAS items 37, 38, and 47 through 51 which are inappropriate questions for some college students were suppressed in scoring this survey, and the missing data weights provided in the scoring instructions were substituted for these questions.

BSRI. The BSRI (Bem, 1974) data was scored according to the original system which subtracts the average endorsed score for feminine characteristics from the mean score for the masculine characteristics. This scoring procedure does not, thus, distinguish between persons who believe both masculine and feminine characteristics are very applicable to them (androgenous) and those who feel both sets of characteristics apply, but only rarely (undifferentiated). However, only one person in our sample had mean scores on the masculine and feminine items in a range that would be considered as undifferentiated, i.e. means of 1 to 2.

Parenting Behavior Form. The Parenting Behavior Form (Judith Worell, personal communication) was completed for both parents and scored for 12 scales. The Parenting Behavior Form consists of sets of items that describe each parent's behavior from the perspective of the child. The respondent is asked to rate each descriptive statement as

being like, somewhat like, or not like the parent at the time the respondent was 16 years old. For each parent, scales assessing Warmth, Active Involvement, Egalitarianism, Cognitive Involvement, Cognitive Curiosity, Cognitive Competence, Conformity, Achievement Control, Strict Control, Punative Control, Hostile Control and Rejection were completed.

Analysis

Two groups were established on the basis of scores above or equal to the mean (Group 1) or less than the mean (Group 2) on the Type A scale of the JAS for (1) male and female volunteers, (2) the male volunteers, and (3) the female volunteers. Demographic, BSRI and parenting data were analyzed using a discriminative analyses program from the Statistical Package for Social Scientists (Nie, et al., 1975) to determine if these variables would predict Type A group membership for the combined male and female sample. The univariate *F* tests for the demographic variables were considered to establish a smaller data base which was analyzed separately for men and women for the same above and below the Type A Scale mean groupings. For these separate male and female analyses all but 10 of the demographic variables were excluded from the data base which was otherwise unchanged.

Results

Discriminative analysis of the total sample and the total data base resulted in 88 students with scores equal to or above the group mean on the Type A scale of the JAS while 82 students fell below the mean. These data are shown in Table 1. When compared to Jenkins' normative sample, the

high Type A students were in the 70th percentile while the low Type A students were in the 30th percentile.

Insert Table 1 about here

The high Type A students scored higher on the other factors of the JAS also. No further analysis of the JAS data was done.

Discriminative analysis of the BSRI-, demographic-, and parenting behavior-data showed that these data correctly classified 84.1% of the subjects into the appropriate high or low Type A groups (Table 2). Three variables correctly predicted group membership at the $p \leq .0001$ level. They were: a marital status other than single, more androgenous sex roles, and less perceived use of punitive control by fathers. The variables discriminating Type A membership are shown in Table 3. Significant univariate F test values for comparisons between the two groups were obtained for four variables shown in Table 3. Four additional variables yielded significant ($p \leq .05$) univariate F values. Two reflected the older age of high Type A students and their report of more hours per week spent in physical recreation. The final two variables indicated that high Type A students perceived less warmth and egalitarianism on the part of their fathers than low Type A students.

Insert Tables 2 and 3 here

When the data were analyzed separately for each sex a somewhat different pattern emerged. Mean scores for the groups established on the basis of Type A scale scores above and below the means for males are shown in Table 4. The high Type A male students scored at the 80th percentile of Jenkins' normative data sample, while the low Type A male students were at the 40th (Table 5). High Type A males scored above low Type A males on all factors of the JAS except Job Involvement, where there were no differences.

A limited set of variables correctly discriminated group membership of 84.8% of the men. Parenting variables were responsible for the discrimination and they are shown in Table 6. Significant univariate F test comparisons were obtained for five variables that entered into the discrimination. Four additional variables yielded significant univariate F values ($p \leq .05$). They were: Father's active involvement and cognitive competence and mother's cognitive independence and achievement control. In all cases, these differences reflect High Type A men reporting that these characteristic behaviors are less like their parents than low Type A men.

Insert Tables 4, 5, and 6 here

Female students that were above the group mean for women on the Type A scale of the JAS scored at the 65th percentile of the Jenkins' normative data sample. Means for the two groups of female students on the four scales of the

JAS are shown in Table 7. High Type A women scored above low Type A women on all scales of the instrument.

The data allowed correct group identification for 78% of the women as seen in Table 8. The variables that contributed to this discrimination are shown in Table 9. Three variables discriminated between the high and low Type A female at the $p \leq .0001$ level. They were: marital status other than single, more androgenous sex roles, and the use of hostile control by mothers. In addition to these three variables, the perception of significantly ($p \leq .03$) more maternal rejection entered into the discrimination of high Type A women. The univariate F value for the comparison of the amount of time spent per week in physical recreation was significant ($p \leq .02$) reflecting the increased time reported by the high Type A women.

The mean BSRI score for these students was -0.07 on a scale for which values between -.5 and +.5 can be considered androgenous. When the sexes were considered independently, the average BSRI value of -0.64 placed males in the near masculine group. The univariate F for males was not significantly different for high Type A and low Type A males, and the factor did not enter into the discriminative function. For women, however, the BSRI scores significantly ($F_{1,108} = 12.59$, $p \leq .006$) differentiate the groups. High Type A women had mean BSRI scores of -0.01, while the mean for women not included in this group was 0.48 which approaches the lower boundary (.5) of the scores designated as near feminine.

Discussion

The results of the study can be considered from a number of different perspectives. A large number of students reported a high degree of cardiac prone behavior. The finding that 46% of the men and 54% of the women score at or above the 80th and 65th percentile, respectively, for Jenkins' norms indicate the degree to which these behaviors are incorporated in life styles even prior to individuals entering the full-time labor force. Students in this study were mainly freshmen or sophomores, enrolled full-time and about half had part-time jobs requiring not more than 10 hours per/week. They were average students with GPA's between C and B who spent 5 to 8 hours per week studying. Thus, our finding of an average Type A score for 88 students at the 70th percentile was surprising and suggests that early identification of a group at risk for cardiac disease is possible.

Our data indicate that perceived parenting styles, personal characteristics and behaviors, and family health factors are associated with coronary disease prone behavioral profiles in college aged persons. The BSRI was the major variable significantly differentiating the high- from the low- Type A women. Low Type A women had a mean BSRI score of 0.48, in the androgenous/near feminine range. This indicates that rejection of traditional feminine sex-role characteristics is not necessarily correlated with endorsement of characteristic behaviors associated with coronary disease.

However, the high Type A women more strongly endorsed traditional masculine behaviors, resulting in a mean score of -0.01 for this group. This raises a question of whether women endorsing more traditional masculine attributes are also endorsing life styles that may promote coronary problems.

A major interest in this study was to determine the degree to which perceived child rearing practices, as indicated by scores on the Worell Parenting Behavior Form, were associated with Type A behaviors. For males these emerged as the strongest variables. Factor analyses of the Worell instrument has identified three dimensions underlying the scales: parental warmth vs rejection, parental control and parental cognitive involvement (Kelly and Worell, 1976).

High Type A students might be expected to report increased use of control on the part of their parents, as Carver (1980) reported that Type A men and women perceive more coercion than Type B's in low coercive situations. All students in our sample perceived their parents to use moderate amounts of strict-, punative- and hostile control insofar as they described these behaviors as "somewhat like" their parents. On those variables entering into the discriminative function high Type A women in comparison to low Type A women perceived their mothers as using more hostile control and their fathers as using less strict, punative and hostile control. High Type A men similarly reported punitive control to be less like both parents and hostile control to be less like their mothers than did low Type A men. Thus, in only

one instance (women's perception of mother's use of hostile control) is the expectation met that high Type A persons perceive more coercion than low Type A people.

Glass (1977) suggested that Type A behavior is a response style aimed at maintaining and asserting control over uncontrollable events. With this suggestion in mind, then, our general finding that high Type A men view the behaviors described in the Worell scales, as being less descriptive of their parents than do low Type A males can be considered to represent an attempt by high Type A men to maintain independence by denying that their parents exercised any type of control over them. For Type A women a similar process may underlie their view of their father's parenting styles.

In terms of affective parenting styles high Type A men report both parents to be less warm and less rejecting than low Type A men do. High Type A women in comparison with low Type A women viewed their mothers as more rejecting but warmer and more accepting. Ascribing more rejection and acceptance to their mothers may seem paradoxical, but it parallels Glass's (1977) observation that Type A mothers were both more supportive and more rejecting of their children.

In summary, these data are a useful first look at the relationship between parenting styles, sex role orientation, and cardiac-prone behavior in college men and women. They suggest that high Type A college men and women share a

common perception of their parents as having had less control over them than that reported by low Type A students. In terms of affective dimensions, the high type A men and women report different perceptions of their parents. High Type A male students perceive both parents to be less warm and less rejecting than low Type A men do. Thus, high Type A men perceive their parents' affective behaviors as similar to their control behaviors and both are seen as being less characteristic of parents of high Type A men than low Type A men. High Type A women view their mothers as warmer, but more rejecting than low Type A women do. Father's affective behaviors are viewed similarly by both high- and low- Type A women. In addition, high Type A women endorse masculine sex role characteristics more strongly than do low Type A women, while for men sex role orientation does not distinguish between persons in the two Type A groups. In general, the data support the idea that cardiac prone behavior may be identified relatively early in life and may be related to socialization processes.

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Table 1

Males and Females with Mean Type A Scores

Equal to or Above the Group Mean (Group 1, n=86)

or Below the Group Mean (Group 2, n = 82)

Scale	$\bar{X}$	S.D.	Percentile
Type A			
Group 1	274.8	36.9	70
Group 2	175.6	34.0	30
Speed and Impatience			
Group 1	195.9	60.5	60
Group 2	146.3	48.0	35
Job Involvement			
Group 1	205.7	30.0	45
Group 2	199.7	27.1	40
Hard-Driving and Competitive			
Group 1	120.6	30.0	50
Group 2	99.0	21.8	25

Table 2

Discriminative Analysis Outcome

Males and Females Combined

Actual Group	N of Cases	Predicted Group 1	Predicted Group 2
Above $\bar{X}$ Type A	88	71 (81%)	17 (19%)
Below $\bar{X}$ Type A	82	10 (12%)	72 (88%)

84.1% correctly classified,

$X^2_{26} = 92.4$, $p \leq .00001$

Table 3

Variables discriminating Students (Male and Female) with Type A Behavior Scores Above the Group Mean

Demographic Variables

- fewer single
- shorter stature
- reared by natural parents
- more deceased fathers

Personal Behavior Patterns

- more hours per week of physical recreation
- more hours per week in extra curricular activities
- enrolled in fewer hours/semester
- began smoking at an earlier age
- more androgenous sex roles*

Parents Childrearing Behaviors

Fathers
- less punitive control*
- less strict control
- less supportive of cognitive independence
- less supportive of conformity*
- less supportive of curiosity
- less active involvement

Mothers
- more rejecting
- less supportive of conformity
- less supportive of curiosity
- less warmth

Family Health Factors

Fathers
- more high serum cholesterol
- more hypertension
- more heart disease

Mothers
- more hypertension
- more obesity

* $F_{1,168} \geq 3.80$, $p \leq .05$

Table 4

Means and Standard Deviations

Males with Mean Type A Scores Equal To or Above the Group Mean (Group 1,n=27) or Below the Group Mean (Group 2,n=32)

Scale	$\bar{X}$	S.D.	Percentile
Type A			
Group 1	293.7	37.6	80
Group 2	195.9	32.7	40
Speed and Impatience			
Group 1	222.0	61.8	75
Group 2	15[illegible].0	51.8	40
Job Involvement			
Group 1	202.6	33.4	40
Group 2	20[illegible].9	23.5	40
Hard-Driving and Competitive			
Group 1	126.0	28.4	55
Group 2	103.5	22.1	25

Table 5

Discriminative Analysis Outcome

Males

Actual Group	N of Cases	Predicted Group 1	Predicted Group 2
Above $\bar{X}$ Type A	27	24 (89%)	3 (11%)
Below $\bar{X}$ Type A	32	6 (19%)	26 (81%)

84.8% correctly classified

$X^2_{17} = 50.0$, $p \leq .00001$

Table 6

Variables Discriminating Male Students with Type A Behavior Scores Above Group Mean

Demographic Variables

none

Personal Behavior Patterns

none

Parents Childrearing Behaviors

Fathers
- less warmth*
- less supportive of cognitive independence
- less punitive control
- less equilitarian*
- less hostile control
- less rejection

Mothers
- less warmth*
- less supportive of cognitive competence
- less supportive of conformity
- less supportive of curiosity
- less rejecting
- less active involvement*
- less punitive control
- less equalitarian*

Family Health Factors

more maternal grandfathers with high serum cholesterol
more maternal grandmothers with hypothyroidism

* $F_{1, 57} \geq 4.43$, $p \leq .03$

Table 7

Means and Standard Deviations

Females With Mean Type A Scores Equal to or Above the Group Mean (Group 1,n=59) or Below the Group Mean (Group 2,n=51)

Scale	$\bar{X}$	S.D.	Percentile
Type A			
Group 1	266.8	34.5	65
Group 2	166.7	32.6	25
Speed and Impatience			
Group 1	187.6	56.9	60
Group 2	138.9	42.2	30
Job Involvement			
Group 1	206.9	28.3	45
Group 2	197.9	29.6	40
Hard-Driving and Competitive			
Group 1	117.5	30.7	45
Group 2	98.4	22.6	20

Table 8

Discriminative Analysis Outcome

Females

Actual Group	N of Cases	Predicted Group 1	Predicted Group 2
Above $\bar{X}$ Type A	59	44 (75%)	15 (25%)
Below $\bar{X}$ Type A	51	9 (18%)	42 (82%)

78.2% correctly classified

$X^2_{12} = 58.3, \quad p \leq .00001$

Table 9

Variables Discriminating Female Students with Type A Behavior Scores Above Group Mean

Demographic Variables

fewer single*

Personal Behavior Patterns

more hours/week of physical recreation
more androgenous sex roles*

Parents Childrearing Behaviors

Fathers
less punitive control
less strict control
less hostile control

Mothers
more hostile control*
more rejecting*
less supportive of cognitive independence
less active involvement
more warmth

Family Health Factors

more maternal grandfathers with high serum cholesterol
more paternal grandmothers with hypothyroidism

*$F_{1, 108} \geq 4.6$, $p \leq .03$